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China Report

ECONOMIC AFFAIRS

(FOUO 2/80)

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FUELS AND POWER

DEVELOPMENT OF NUCLEAR POWER IN CHINA DISCUSSED

Tokyo ASAHI SHIMBUN in Japanese 13 Mar 80 pp 1, 4

[Text] China has already generally completed the design for a pressurized-water-type atomic power plant, and it is scheduled to start construction soon and begin operation three to five years hence, at the earliest. This was clarified by the Chinese Atomic Energy Inspection Mission, which is visiting Japan, when it was exclusively interviewed by ASAHI SHIMBUN reporters. China has so far been giving priority to the development of nuclear weapons, in regard to atomic energy. However, it has firmed up the policy of putting this atomic energy technology to peaceful uses in the future, and utilizing it as an important energy source. It seems that an age of peaceful uses of atomic energy will come to China, too.

The interview was held at the Industrial Club in Marunouchi, Tokyo, before the Mission's return home on the 13th.

The Inspection Mission consists of three persons, including State Council Second Machine Industry Department Production and Technology Bureau Vice-Director CAO Benxi, the Head of the Mission, and Second Machine Industry Department Reactor Research and Design Office Vice-Director JI Xiaohong.

According to Head CAO, the Second Machine Industry Department corresponds to the Atomic Energy Ministries of various nations. Since 1956, it has been in charge of exploration of uranium, mining, enrichment, reprocessing, etc., centering on military uses of atomic energy. At present, there are two atomic energy design groups in the said Department, and they are pushing the designing of a 300,000-KW pressurized-water-type power reactor and a heavy-water-type power reactor with the output capacity of 100,000 or 200,000 KW. It is said that the designing of the pressurized water power reactor has been generally completed. Construction work will be started after obtaining the approval of the State Council, and the operation of China's first atomic power plant will be started from 1983 to 1985, at the earliest. The first reactor is the pressurized water reactor. It is expected to be constructed in the vicinity of Shanghai. It is said that China has decided to tackle atomic power generation for the reason that energy is generally insufficient in that country, and that there are many cases where the zones producing such resources as coal are far away from cities and industrial zones.

To hasten the construction of the power plant, China will partially introduce technology from foreign countries, but basically it wants to carry out autonomous development. In 1978, China concluded an agreement with France to purchase two 900,000-KW pressurized-water reactors from that country. According to Head CAO, however, this agreement has virtually fallen through because of China's economic circumstances. Head CAO said that from what country China will introduce technology in the future will be decided without any connection with that, and suggested that its introduction of technology from Japan is also possible.

At the 1st National Congress of the China Atomic Energy Institute, which was held last month, Deputy Premiers WANG Zhen and FANG Yi said that "Military uses of nuclear energy must not be separated from civilian requirements." In this regard, Head CAO said, "This means that although uses of atomic energy have so far given priority to military purposes, efforts must be made in the future also for civilian requirements, including power generation and uses of radioactive isotopes." Thus, he clarified that the development of atomic energy by China is undergoing a big change of front.

The Chinese Mission came to Japan on the 3rd, and inspected the atomic energy facilities of the Japan Atomic Energy Research Institute in Ibaraki Prefecture, the Power Reactor and Nuclear Fuel Development Corporation, etc., after attending the annual convention of the Atomic Energy Industrial Forum. It will leave for home on the 13th.

Interview with Chinese Atomic Energy Inspection Mission Head CAO; Atomic Power Generation Necessary Because of Shortage of Electric Power, Though There Is Opposition within Government.

The Chinese Atomic Energy Inspection Mission, which is visiting Japan, clarified that China also is planning to tackle atomic power generation in a positive way. How is China planning to push the development of atomic energy? What is the background of its change of front? The following is the gist of questions and answers with Head CAO: (Interviewer: Reporter Isao TANABE)

--At the meeting of the China Atomic Energy Institute, held in February, Deputy Premiers WANG Zhen and FANG Yi made speeches, to the effect that "Military uses of atomic energy must not be separated from civilian requirements." What does this mean?

"The Chinese reactors have so far been chiefly producing plutonium for military purposes. In the future, greater efforts must be made also for atomic power generation for civilian use and application of radioactive isotopes. This is what that means. The technicians necessary for this purpose will partially change from military studies to atomic power generation."

--Is there any concrete plan for atomic power generation?

"The Second Machine Industry Department is now pushing the designing of two kinds of reactors for power generation. The pressurized-water light-water

reactor, of which the Research and Design Office in Shanghai is in charge, will have an output capacity of about 300,000 KW. The designing will be completed soon."

--Where and by what time will it be constructed?

"It is scheduled to be constructed in the East China area--in the vicinity of Shanghai. It will start operation as China's first atomic power plant three to five years hence, at the earliest."

--Will you construct any reactor other than the pressurized-water type?

"We are planning to construct a heavy-water reactor, but this is still in the midst of designing. We want to construct both by our own power, but there is also the possibility that we will partially introduce technology from foreign countries because of relations with the duration of work. Even the prototype reactor requires a fairly large amount of money, and it is necessary to receive the approval of the State Council for the realization of the plan. We must still check into the final plan and the speed with which it will be achieved."

--What organization is taking the lead in the development of atomic energy?

"There are the 1st to the 7th Machine Industry Departments under the State Council. Of these, the 2nd Machine Industry Department has been in charge of all studies on atomic energy since 1956, centering on such energy for military purposes. The subjects of its studies include exploration and mining of uranium, enrichment of uranium, production (of reactors, etc.), reprocessing, disposal of radioactive waste, and uses of radioactive isotopes."

--What is the lineup of the 2nd Machine Industry Department?

"We cannot clarify that except that it consists of more than 10,000 persons."

--How many reactors for research purposes do you have? What about the training for technicians?

"There are many research reactors, including heavy-water reactors, swimming pool reactors, and reactors for the testing of materials. They are home-produced. The Atomic Energy Over-All Research Institute in Beijing is producing radioactive isotopes for medical and other purposes. At a few universities, there are subjects for the training of atomic energy technicians on reactor chemical engineering, geological exploration, etc. The Nuclear Fusion Research Institute is starting studies on nuclear fusion."

--There was a story of your purchasing pressurized-water reactors from France in 1978, but...

"The Water Conservancy and Power Ministry pushed business talks with France to purchase two 900,000-KW reactors from that country. At that time, however, (our country) had to adjust plans requiring large amounts of funds, and the business talks were postponed. Our country's introduction of technology in the future will be utterly different from this."

--What is the reason for having chosen a pressurized-water reactor and a heavy-water reactor for the first power plant to be constructed by your independent technology?

"All types of reactors have both merits and demerits, and there were arguments until the decision was made. In the case of the heavy-water reactor, natural uranium can be used, and reprocessing is easy, too. As to which to choose among light-water reactors, the pressurized-water reactor or the boiling-water reactor, we are better experienced as to pressurized-water reactors, internationally, and we thought that they are more advantageous from the standpoint of the nuclear fuel cycle, too."

--There was once a report saying that China had developed an atomic-powered submarine. Is there also the background that its experience in the development of the pressurized-water reactor at that time is helpful this time?

"In regard to the atomic-powered submarine, I want you to conjecture from the words that 'We did the work in the past'" (There is a nuance that China gave it up halfway).

--What do you think about the accident at the atomic power plant on Three Mile Island in the U.S.?

"As the first report on the accident was not correct, we thought at first that it was a serious accident. After that, however, we learned the details, and recently we think that 'it was an accident rather proving the safety of an atomic power plant.' An investigation mission was dispatched to Three Mile Island from the academic circles of our country, too."

--Is there no opposition by the people in regard to atomic power generation?

"There is. It is necessary to have them observe (atomic power generation facilities), and to explain and publicize safety devices. Even within the Government, there are opinions expressing opposition. The final policy will be decided upon through discussions."

--Why is China, which is rich in coal and oil, to start atomic power generation?

"China is now short of electric power, and energy is presenting a very big problem. Although China has a lot of hydraulic power and coal and oil reserves, the water usable for power generation exists only in the southwest area, and it is difficult to transmit electric power. As to oil, only burning it is wasteful, when future demand is taken into consideration. Coal also is scarce in the vicinities of cities, and it is difficult to transport. I think atomic power generation is necessary at places where population is concentrated and in industrial zones."

--How will you secure uranium ore?

"We will make efforts for the exploration and mining of uranium, too. Exploration for uranium in our country is still small in scale, and the output is small, too. However, it meets our own demand even at present. We will push exploration in co-ordination with future demand, but probably there will arise a surplus exceeding domestic demand."

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END